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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/574,550	04/03/2006	Takashi Ishikawa	289075US0XPCT	4108
22850	7590	11/01/2007		
OBLON, SPIVAK, MCCLELLAND MAIER & NEUSTADT, P.C. 1940 DUKE STREET ALEXANDRIA, VA 22314				
			EXAMINER	
			REDDY, KARUNA P	
			ART UNIT	PAPER NUMBER
			1796	
			NOTIFICATION DATE	DELIVERY MODE
			11/01/2007	ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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<b>Office Action Summary</b>	<b>Application No.</b> 10/574,550	<b>Applicant(s)</b> ISHIKAWA ET AL.	
	<b>Examiner</b> Karuna P. Reddy	<b>Art Unit</b> 1796	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on September 6, 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☒ Claim(s) 11 and 20 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

### **DETAILED ACTION**

1. This office action is in response to the amendment filed on September 06, 2007.  
Applicants amended claims 1-10 and added claims 11-20. Claims 1-20 are currently pending in the application.
2. The texts of those sections of Title 35 U.S. Code not included in this action can be found in office action mailed March 06, 2007.

### ***Claim Objections***

3. Claims 11 and 20 are objected to because of improper grouping of Markush elements. Claims 11 (line 2) and 20 (line 2) recite "...at least one of a crosslinking .... and a colorant" and should read "...at least one of a crosslinking .... or a colorant." Appropriate correction is required. See MPEP 2173.05(h)

### ***Claim Rejections - 35 USC § 103***

4. Claims 1, 3-5, 7-8, 10; and 11, 13-15, 17-18, 20 (new claims) are rejected under 35 U.S.C. 103(a) as being unpatentable over Sugawara et al (5,68,493) in view of Jenkins et al (US 5,739,196).

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With respect to claims 1, 3-5, 7-8, 10, 13-15 and 17-18, the rejection is adequately set forth in paragraph 5 of office action mailed 3/6/2007 and is incorporated here by reference.

With respect to claims 11 and 20, plasticizer or film forming auxiliary is added in an amount of 1 to 50 parts by weight (column 3, lines 53-54).

5. Claims 2 and 12 (new claim) are rejected under 35 U.S.C. 103(a) as being unpatentable over Sugawara et al (5,68,493) in view of Jenkins et al (US 5,739,196), and further in view of Furuya (US 6,048,910)

The rejection is adequately set forth in paragraph 6 of office action mailed 3/6/2007 and is incorporated here by reference.

6. Claims 6 and 16 (new claim) are rejected under 35 U.S.C. 103(a) as being unpatentable over Sugawara et al (5,68,493) in view of Jenkins et al (US 5,739,196), and further in view of Yasuhiro (JP 11-269041).

The rejection is adequately set forth in paragraph 7 of office action mailed 3/6/2007 and is incorporated here by reference.

7. Claims 9 and 19 (new claim) are rejected under 35 U.S.C. 103(a) as being unpatentable over Sugawara et al (5,68,493) in view of Jenkins et al (US 5,739,196), and further in view of Socci et al (US 6,139,822).

The rejection is adequately set forth in paragraph 8 of office action mailed 3/6/2007 and is incorporated here by reference.

***Response to Arguments***

8. Applicant's arguments, see page 9, lines 6-10, filed on September 06, 2007, with respect to objection of claims 1-2, 4-6, 8; and specification have been fully considered and are persuasive. The objection of specification and claims 1-2, 4-6 and 8 has been withdrawn.
9. Applicant's arguments filed 9/6/2007 have been fully considered but they are not persuasive. Specifically, applicant argues (A) Suguwara et al teaches a chain transfer agent that is not of the general formula (I) recited in claim 1 and chain transfer agent in conformity with general formula (I) i.e. 2-ethylhexyl 3-mercaptopropionate (BMPA-2EH) provides superior removal efficiency, freeze-thaw resistance, odor and appearance; (B) BMPA-2EH is not functionally equivalent to dodecyl mercaptan (DDME) of Suguwara et al because BMPA-2EH provides unexpected and superior properties over DDME; (C) Suguwara et al's hydrophobic monomer 2-ethylhexyl acrylate is not functionally equivalent to applicant's monomer t-butyl methacrylate (t-BMA) and cyclohexyl methacrylate (CHMA) because they produce different results; and (D) teaches away from a

combination of molecular weight lower than 60,000 and particle size of 30 to 200 nm.

With respect to argument (A) and (B), BMPA-2EH is functionally equivalent to DDME in its ability to function as a chain transfer agent and thus regulate the molecular weight. Data pertaining to superior performance of BMPA-2EH over DDME are not convincing because the trials are not back-to-back. Back-to-back trials require that all components and their proportions remain the same, with there being only one variable and that single variable is associated with superior performance. In the present application there are two variables i.e. amount and the kind of chain transfer agent. In the present application, inventive example 1 uses an amount of 2.0 wt parts of BMPA-2EH while the comparative runs 3 and 4 use amounts of 1.3 wt parts and 0.05 wt parts of DDME respectively. Therefore, it is not clear if the superior performance of removal efficiency, freeze-thaw resistance, odor and appearance is related to change in chain transfer agent or its amount.

With respect to (C), it is the examiner's position that 2-ethylhexyl acrylate (2-EHA) is functionally equivalent to CHMA and t-BMA in their ability to act as hydrophobic monomers. Data pertaining to superior performance of CHMA and t-BMA over 2-EHA are not convincing because the trials are not back-to-back. Back-to-back trials require that all components and their proportions remain the same, with there being only one variable and that single variable is associated with superior performance. Therefore, it is not clear if the superior performance

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is related to change in the amount of CHMA / t-BMA or the amount of other monomers such as MMA and styrene (see table below).

Monomer/CTA*	Example 1	Example 6	Comp Ex. 5	Comp Ex. 6
t-BMA	39.3	19.7	0	0
CHMA		19.6		
MMA	235.6	238.4	274.9	274.9
Styrene	39.3	39.3	39.3	39.3
Acrylic acid	3.9	3.9	3.9	3.9
2-EHA	70.7	67.9	70.7	70.7
2-HEMA	3.9	3.9	3.9	3.9
CTA	7.8	7.8	7.8	7.8

\*CTA – Chain transfer agent

With respect to (D), Yasuhiro's example 1 and comparative examples 1, 4 and 7 reflect the criticality of molecular weight to adhesiveness, water resistance and durability, while the particle size is adjusted to improve gloss and film forming behavior. In fact, lowering molecular weight decreases viscosity of copolymer and improves film-forming behavior. Therefore, if one skilled in the art can tolerate disadvantages disclosed by Yasuhiro for a low molecular weight polymer, it would have been obvious to adjust the particle size in composition of

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Suguwara et al to between 30 and 200 nm and obtain a composition with improved gloss and film forming behavior.

### ***Conclusion***

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

### ***Contact Information***



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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Karuna P. Reddy whose telephone number is (571) 272-6566.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vasu Jagannathan can be reached on (571) 272-1119. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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